



UNITED STATES PATENT AND TRADEMARK OFFICE

Wm

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/053,512	11/02/2001	Mike Carlomagno	018190-307	1668
7590	09/09/2004		EXAMINER LAUCHMAN, LAYLA G	
James W. Peterson BURNS, DOANE, SWECKER & MATHIS, L.L.P. P.O. Box 1404 Alexandria, VA 22313-1404			ART UNIT 2877	PAPER NUMBER

DATE MAILED: 09/09/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/053,512	Applicant(s) CARLOMAGNO ET AL.	
	Examiner L. G. Lauchman	Art Unit 2877	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 June 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1,3-11, 13-15, 16-22, 24, 25, 27,28 rejected under 35 U.S.C. 103(a) as being unpatentable over Hosotani et al (US 6,246,789), in view of Ueno et al (US 2004/0020043), and further in view of Ujiie (US 5,457,538).

As to Claims 1, 3-5, the patent to Hosotani teaches a component mounting apparatus, comprising: a frame (see FIG. 1), a tool head 15 connected to the frame, the tool head being adjustably movable in X and Y directions with respect to the frame (see col. 9, lines 32-62), a component platform 16 connected to the frame, the component platform being adjustably movable in Y direction with respect to the frame, and an optical system 19 (see Fig. 6) positionable to view the tool head 15 and the component

platform 16. The patent '789 fails to disclose (a) the component platform moving in X direction, and (b) the tool head and the component platform being viewed simultaneously. Ueno teaches a component mounting system having a component platform 10 being able to move in X and Y directions (See Fig.2, paragraph 0035). The fact that the head tool of the present application is able to move in both X and Y directions is not novel; the ability of a device to move in X-Y directions for alignment purposes with another device, which is able to move in X-Y directions as well, is known in the art (for example, see US 6,708,402 to Hirano et al) and would be obvious to have since the ability to move in two directions instead of one would improve the accuracy of the measurements.

Ujiie teaches an apparatus and method for visually determining the correct soldering position of an electric component with respect to the PCB. The patent '538 discloses a camera 80 (see FIG. 4) for simultaneous viewing of the image R1 of the semiconductor device D and image R2 of the PCB C (see col. 5, lines 16-28).

It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the combined inventions of Hosotani and Ueno with a camera viewing the images of the tool head and the component platform simultaneously as taught by Ujiie, since the camera of Ujiie would provide the combined inventions of Hosotani and Ueno with ability to view the two images superimposed one over another.

The tool head in the invention of Hosotani is a component positioning head. The component platform is a PCB holder.

As to Claims 6-8, the patents '789 and '538 and application '043 teach everything as applied to Claim 1, in addition a first positioning screw for moving the component platform in the X direction, and a second screw for moving the component platform in the Y direction (see col. 17, lines 55-67, and col. 18, lines 1-7).

As to Claims 9-11, the patents '789 and '538 and application '043 teach everything as applied to Claim 1, in addition at least one positioning rod 231 (see Fig. 8) for moving the tool head in the X direction, and at least one positioning rod 231 for moving the tool head in the Y direction. The tool head is slidably movable along the positioning rod (see Col. 9, lines 39-44), the positioning arm is slidably movable in the Y direction and the tool head is slidably movable in the X direction.

As to Claim 12, the patents '789 and '538 and application '043 teach everything as applied to Claim 1, except for the first and the second pair of positioning rods and a pair of positioning arm. The function of the rods and the arm is to make the tool head slidably movable along the X and Y directions. The tool head 15 of the patent '798 is movable along the X and Y directions by different means. However, since the function of moving the tool head in X and Y direction is being performed, the structure lacks criticality. Therefore, it would have been an obvious matter of design choice to select a certain structure of rods, arms, or screws to move the tool head in the X and Y directions.

As to Claims 13-15, the patents '789 and '538 and application '043 teach everything as applied to Claim 1, in addition a camera 19 a, and a beam splitter, the

beam splitter is being movable (col 10, lines 1-27), retractable such it can be moved away from a location between the tool head and the component platform.

As to Claims 16-21, the apparatus of Claim 1 is capable of performing the method as claimed.

As to Claims 22, 24, 25, 27, 28 the patent teaches everything as applied to Claim 16, in addition positioning a movable beam splitter 19d between the tool head and the component platform, and viewing through the beam splitter with a camera 19a. The tool head is a component positioning head. The platform is a PCB holder.

Claims 2 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hosotani et al (US 6,246,789), in view of Ueno et al (US 2004/0020043), and in view of Ujiie (US 5,457,538) as applied to claims 1 and 16 above, and further in view of Blais et al (US 5,044,072).

As to Claims 2 and 23, the patents '789 and '538 teach everything as applied to Claims 1 and 16 respectively, except that the tool head comprises a soldering/desoldering tool head. However, the patent '072 discloses a method and apparatus for alignment and placement of electrical component, where in the tool head (see Figs. 1 and 4, col.4, lines 23-29) comprises a soldering tool head. It would have been obvious to use a soldering tool head in the combined invention of Hosotani and Ujiie, since it would integrate the electrical component into the printed circuit board.

Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hirano et al (6,708,402), and further in view of Ujiie (US 5,457,538).

Hirano teaches a component mounting device, comprising: (see col. 5, lines 40-62, and col. 7, lines 1-12) a positioning the tool head while the component platform is maintained at a fixed location; and then positioning the component platform while the tool head is maintained at a fixed location, while simultaneously viewing the positions of the tool head and the component platform.

Hirano does not teach the tool head and the component platform being viewed simultaneously.

Ujiie teaches an apparatus and method for visually determining the correct soldering position of an electric component with respect to the PCB. The patent '538 discloses a camera 80 (see FIG. 4) for simultaneous viewing of the image R1 of the semiconductor device D and image R2 of the PCB C (see col. 5, lines 16-28).

It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the of Hirano with a camera viewing the images of the tool head and the component platform simultaneously as taught by Ujiie, since the camera of Ujiie would provide the invention of Hirano with ability to view the two images superimposed one over another.

Response to Arguments

Applicant's arguments with respect to claims 1-28 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Papers related to this application may be submitted to Technology Center 2800 by facsimile transmission. Papers should be faxed to TC 2877 via the PTO Fax Center located in CP4-4C23. The faxing of such papers must conform with the notice published in the Official Gazette, 1096 OG 30 (November 15, 1989). The CP4 Fax Center number is (703) 872-9306.

If the Applicant wishes to send a Fax dealing with either a Proposed Amendment or for discussion for a phone interview then the fax should:

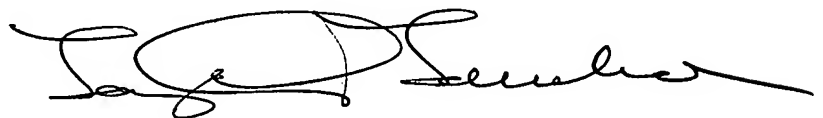
a) Contain either the statement "DRAFT" or "PROPOSED AMENDMENT" on the Fax Cover Sheet; and

b) Should be unsigned by the attorney or agent.

This will ensure that it will not be entered into the case and will be forwarded to the examiner as quickly as possible.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to L. G. Lauchman whose telephone number is (571) 272-2418. The examiner's normal work schedule is 8:00am to 4:30pm (EST), Monday through Friday. If attempts to reach examiner by the telephone are unsuccessful, the examiner's supervisor Gregory J. Toatley, Jr. can be reached on (571) 272-2059, ext. 77.

Any inquiry of a general nature or relating to the status of this application should be directed to the TC receptionist whose telephone number is (571) 272-1562.

A handwritten signature in black ink, appearing to read 'L. G. Lauchman', with a long horizontal flourish extending to the right.

L. G. Lauchman
Patent Examiner
Art Unit 2877

August 27, 2004